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ABSTRACT

This booklet addresses itself to two basic questions: (1) what should be the University's objective in investing endowment funds? and (2) what part of the University's total return on endowment should be regarded as spendable income in any given year? After outlining the basic objective, which should be to obtain the highest possible total rate of return, the booklet defines spendable income and discusses the current financial rules of Princeton University, and the legal issues, the economic issues and questions of general policy involved. It then makes a proposal for a redefinition of endowment income and outlines and discusses in some detail the general features of a "Basic Plan." Included in the appendices are: (1) a glossary of terms; (2) historical data on the performance of the Princeton investment pool; (3) a review of plans at other institutions for the treatment of capital appreciation; and (4) notes to accompany illustrations of the proposed plan for a redefinition of endowment income. (AF)

# THE DEFINITION OF ENDOWMENT INCOME

PRINCETON UNIVERSITY



FEBRUARY 1970

# THE DEFINITION OF ENDOWMENT INCOME

A report of a special faculty-administration committee

Princeton University

February 1970

## *PREFACE*

I am pleased, on behalf of the University, to make available to a wider audience this report on the definition of endowment income (with special emphasis on the treatment of capital gains) which was originally prepared solely for internal use. The report is the work of a special faculty-administration committee appointed in the spring of 1969. The members of the Committee were: Burton G. Malkiel and Ricardo A. Mestres (co-chairmen), W. G. Bowen, H. W. Kuhn, and R. E. Quandt. The Committee has asked me to acknowledge the valuable assistance of Scott McVay, who obtained information concerning practices at other institutions and who wrote Appendix C. Also, I am glad to have this opportunity to express the thanks of the University to the Ford Foundation for assistance with our continuing studies of resource allocation, of which this report is one part.

After this report was prepared by the special faculty-administration committee, it was reviewed in detail by Trustees and was then adopted, subject to legal clearances, at the January 1970 meeting of the Board of Trustees. We are now engaged in pursuing the important legal questions that must be resolved before this new approach to the definition of endowment income can be implemented.

The text of the report deals with the general principles involved in selecting an investment portfolio and in determining how the needs of the future are to be balanced against the needs of the present in deciding what portion of the total return on endowment should be spent in any one year. This material can be regarded as complementary to the two general studies of this same subject recently published by the Ford Foundation (*The Law and the Lore of Endowment Funds* and *Managing Educational Endowments*). Persons with a more specialized interest in how the plan recommended here would in fact operate should also pay particular attention to Appendix *D*, which contains a detailed analysis of the functioning of the plan under two sets of hypothetical conditions.

We believe that the adoption of the plan described in this report will make an important contribution to the more effective use of the University's resources; at the same time, we recognize that many of the features of the proposed plan need to be tested by experience and may require modification. We also recognize – and this is a point I wish to emphasize – that adoption of this approach to the utilization of endowment income is but one element of what must be a broad attack, of many parts, on the awesome financial problems confronting all institutions of higher education at the present time.

Robert F. Goheen
President

February 1970

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## THE DEFINITION OF ENDOWMENT INCOME

### *Introduction: The Central Issues*

Many colleges and universities, as well as other kinds of nonprofit organizations, are actively considering the definition of endowment income, with special reference to the treatment of capital gains. At issue are several related questions, which it is useful to distinguish:

1. In investing endowment funds, what should be the University's objective?
2. Of the University's total return on endowment, what part should be regarded as spendable income in any given year?
    a. More specifically, should spendable income be limited to dividend and interest income ("yield," defined in the traditional way),* or should at least some part of capital appreciation also be included?
    b. If it does seem reasonable to regard some part of capital appreciation as spendable income, what rules should be followed in defining that part while still making adequate provision for protection of the corpus of the endowment?

In this report we shall discuss each of these questions in the order presented above. In the course of the discussion we shall include some references to the practices of other institutions, and a fuller summary of these practices is presented as Appendix *C*. It should be emphasized, however, that we do not believe that there is a single approach that is appropriate for all institutions in all circumstances. Our objective in this report is to develop recommendations which seem well-suited to Princeton in its present circumstances.

### *The Objective of Investment Policy*

At many institutions of higher education, those responsible for investing endowment funds have been torn between two objectives which are often in conflict: a high current yield (defined to include only dividend and interest income) and long-term growth of principal. The underlying tension in this debate is, of course, between the needs of the present and the needs of the future. This tension should not – indeed cannot – be made to disappear, no matter what conclusion is reached concerning investment policy. It is our view, however, that this problem of choice between the present and the future should be confronted explicitly in the process of financial planning and budget-making, *not in the process of making investment decisions.*

*See Appendix *A* for a glossary of terms.

We believe that the objective of investment policy should be to obtain the highest possible *total rate of return* – defined to reflect changes in capital values as well as dividend and interest income – consistent, of course, with adequate concern that the risk level assumed is not inconsistent with the need to preserve the corpus of the fund. If this objective is accepted, it follows that the composition of the portfolio must be determined by actual and expected conditions in money and capital markets and by the prospects for various securities and other possible types of investment – not by the relative importance of interest and dividend income on the one hand and capital gains on the other. It is the size of the total return, not its form, which matters.

The case for this approach to investment policy is straightforward. A policy that seeks to maximize the total rate of return is, by definition, more likely than any other policy to achieve the largest possible stream of resources for use by the University over time. The difficulty with any approach to investment policy that puts a special emphasis on one form of return or another is that it limits the freedom of the investment managers to take advantage of the most attractive opportunities. For example, under current market conditions, concern for maximizing dividend and interest income might induce the investment manager to increase the proportion of the portfolio invested in fixed income securities, whether or not such an action was consistent with the objective of maximizing total returns.

Princeton has been fortunate in that those responsible for investment decisions have been concerned with the total rate of return and have not attached undue emphasis to securities with high current yields. (It should be noted that even among the bonds and preferred stocks in the Princeton portfolio, there is a concern for capital appreciation in that many of these securities are convertible into common stock or carry warrants or other "kickers.") Between 1956 and 1969, the unit value of the Princeton pool has increased at an average annual rate of 7.0 percent and the average yield has been 3.2 percent; hence, the total rate of return has averaged 10.2 percent per annum.* This record of performance, which we believe compares very favorably with the performance of most other endowment funds, attests to the aggressive – and successful – management of Princeton's portfolio.

Thus, in the Princeton context our principal concern is not with investment policy as such. Rather, what we believe deserves further consideration is the definition of spendable income from endowment in the light of an investment policy which seeks to maximize the total rate of return while having due regard for the protection of principal.

*See Appendix *B* for the annual figures from which these averages were derived.

## *Defining Spendable Income*

*The Current Financial Rule*

Like many other colleges and universities, Princeton operates under a financial rule which permits it to spend all of the interest and dividend income derived from endowment funds, but none of the capital gains, either realized or unrealized. (It should be noted that in the case of securities which pay stock dividends, a portion of such dividends have been treated by Princeton as spendable income.)

We know of no comprehensive and up-to-date survey of the financial rules employed by other institutions of higher education to define endowment income. One thing we do know, however, is that more and more institutions are adopting a variety of rules and procedures that define spendable income to include some capital gains. Also, we know that a number of other institutions are reexamining their traditional practices.*

To evaluate the merits of the present financial rule at Princeton versus the merits of other approaches, it is necessary to consider both legal and economic aspects of the question.

*Legal Issues*

One reason why many institutions have treated only dividends and interest as spendable income is that legal requirements have been thought to require this approach. In the hope of clarifying this important aspect of the problem, a study of the legal questions involved in the treatment of capital gains was commissioned by the Ford Foundation. The results of this study were published in April 1969 under the title *The Law and the Lore of Endowment Funds*. The major conclusion is stated as follows:

> "We are thus led to the conclusion that there is no substantial authority under existing law to support the widely held view that the realized gains of endowment funds of educational institutions must be treated as principal. No case has been found which holds that such an institution does not have the legal right to determine for itself whether to retain all such gains or to expend a prudent part. We submit that there is no reason why the law should deny the educational institutions that flexibility." (p. 33.)

It should be added, however, that the legal situation in New Jersey may be somewhat more complicated than in most other states because of the possible applicability of a broadly written "principal and income" act. According to the Ford Foundation report: "New Jersey does not deal with the problem specifically, but its principal

*See Appendix C for a summary of the current situation at 16 colleges, universities, and other non-profit organizations.

and income act allocates capital gains to principal, and the unusual definition of 'fiduciary' in the act is broad enough to include charitable corporations. Again [as in the case of an Indiana statute], no case has been found which so holds." (pp. 12-13.)

If the Board of Trustees were to decide that it was desirable to take advantage of the flexibility regarding the definition of spendable income recommended by the Ford Foundation Report, it would presumably be necessary to ask Legal Counsel to carry out a detailed study, directed specifically at the laws of New Jersey, to determine possible ways of implementing such a decision. In the absence of a study of this kind, it is impossible to know whether a declaratory judgment would have to be sought in the courts, whether new legislation would be required, or whether no external permission would be needed to do whatever the Trustees believed to be in the best interests of the University.

One other legal aspect of the treatment of capital gains deserves brief comment. Whatever legal limitations may now exist can pertain only to "true endowment" (funds believed to be restricted as to the expenditure of principal by deed of gift). In addition to funds of this kind, Princeton possesses about $60 million of "funds functioning as endowment." These funds are unrestricted by deed of gift and may be spent as the Board of Trustees sees fit. Thus, the University is legally free to spend whatever portion it wishes of the capital gains earned on these funds – and, indeed, even the principal – without securing either a declaratory judgment from the courts or new legislation. Whether this ought to be done is of course a question of policy.

*Economic Issues and Questions of General Policy*

In looking to the future, we believe that the best interests of the University will be served by moving away from the current definition of spendable income and adopting a new definition which will permit the spending of a prudent part of capital gains under carefully specified conditions. The main features of the new plan we are recommending are described in the last section of this report. Here we wish to discuss four reasons which we believe argue in favor of modifying the present definition of spendable income. These four reasons are:

1. From the standpoint of defining "income" in the relevant economic sense, the distinction between capital gains and dividends or interest is arbitrary.
2. The present definition of spendable income is not the best way of protecting the corpus of endowment funds from being eroded.

3. The fundamental question of the right balance between the needs of the present and the needs of the future – which, subject to certain constraints, ought to be settled as a question of policy – is resolved in an automatic and generally unsatisfactory way by the very definition of spendable income now in use.

4. The present definition of spendable income could exert, under certain conditions of a not unlikely sort, pressure on investment policy to seek objectives other than maximum total return.

1. *The arbitrary nature of the distinction between capital gains and dividend or interest income.* – Viewed from the standpoint of economic analysis, the distinction between capital gains and dividend or interest income can only be described as arbitrary. As both Robert Haig and Henry Simons pointed out many years ago, "income" in the economic sense consists of *all accretions over some time period to a person's (or an institution's) capacity to command goods or services.** The form of the accretion is not of primary importance from this standpoint since (neglecting tax considerations) $100 of capital appreciation that can be realized represents the same increase in one's capacity to command goods or services as $100 of dividends or interest. This point is certainly widely accepted by individuals in managing their own financial affairs, and many institutions (including universities, as Appendix C indicates) are also coming to accept it.

The artificiality of the distinction between capital gains and dividends or interest is also illustrated by the extent to which one form of return can be converted into the other. The most obvious illustration – and the one most relevant to an institution such as Princeton, which invests heavily in equities – concerns the decision a company makes to retain a certain amount of earnings which otherwise could have been paid out as dividends. By retaining the earnings, the company expects, among other things, to increase the market value of its stock and thus to confer capital gains on its stockholders. Thus, it is the company that decides, on the basis of its own objectives and assumptions concerning stockholder preferences, what portion of its total return will take the form of dividends.

2. *Protecting the corpus of the endowment fund.* – One argument often advanced for distinguishing between capital gains, on the one hand, and dividends and interest on the other, and treating only dividends and interest as spendable income, is that this policy will

*See Haig's *The Concept of Income – Economic and Legal Aspects* (1921), and Simons' *Personal Income Tax* (1938). Haig and Simons were well-known professors of economics, at Columbia and Chicago, respectively, and their views on this matter are widely accepted today and are reflected in every modern textbook on finance.

protect the corpus of the investment fund. There is, to be sure, a clear obligation to protect the principal of a true endowment fund, and later in this report we shall discuss this general problem in some detail. The point to be made here, however, is that treating only dividends and interest as spendable income is an awkward – and indeed unreliable – way of pursuing this objective.

A rule providing that dividends and interest constitute spendable income, but that capital gains do not, really implies different standards for the preservation of capital invested in stocks and in bonds. For stocks the rule implies that we preserve the same number of shares or, if there are stock splits, that we preserve our proportional equity in the companies owned. For bonds the implicit standard is that we preserve the dollar value of the principal amount.

Suppose that an institution held a portfolio consisting entirely of bonds and that the rate of price inflation were 3 percent per year. Under the current rule defining spendable income, the institution could spend all of the interest income without putting anything away to make up for the loss in purchasing power of the bonds. For under the current rule the capital is considered to be preserved so long as the principal amount of bonds is kept intact. But, if there is any increase in price level, the real value of the portfolio will obviously decline, and the purchasing power of the endowment will, in fact, have been reduced. Precisely the same result could obtain if the institution had invested in stocks with a high dividend yield but with little or no prospect for capital appreciation.

On the other hand, suppose that the institution held a portfolio consisting entirely of non-dividend paying stocks with excellent growth prospects. In this case, the current rule would dictate that spendable income were zero and that all capital gains should be considered part of the principal of the fund. Here the corpus of the fund is protected – with a vengeance! So long as the rate of inflation is less than the rate of capital appreciation, the institution would be adding to the real value of the endowment, not merely preserving it.

Needless to say, most real-world cases do not correspond to either of the above polar examples. The actual situation at Princeton is a blend of the two, although it tends to resemble the second case more closely in that a high fraction of the University's portfolio is in common stocks which are growth-oriented and which pay low dividends. In any case, the central point is that, whatever the composition of the portfolio, only by accident will the current rule defining spendable income serve even approximately to preserve the real value of the endowment fund. Defining dividends and interest as spendable income, but excluding capital gains, may either undercompensate or overcompensate for changes in the relevant price level, depending on circumstances. As will be indicated later, we believe that there are more direct and more reliable ways of protecting the real value of Princeton's endowment.

3. *The needs of the present versus the needs of the future.* – A closely related, and in some ways more fundamental, difficulty with the present definition of spendable income is that it can force upon the University an inappropriate allocation of resources between the needs of the present and the needs of the future. We argued earlier in this report that the composition of the investment portfolio should be determined solely with reference to obtaining the maximum total return. Now, let us suppose that prospects for various kinds of securities are such that this approach to investment policy leads the University to put the dominant share of its endowment funds into stocks which pay low dividends but which are expected to produce sizeable capital gains. Since under the present definition of spendable income none of the capital gains can be applied to present needs, the result is that this investment policy and this definition of spendable income combine to *force* the University to allocate a large share of the total return on endowment to future needs.

The word "force" is used because we are dealing here with an automatic mechanism which allows no room for conscious decisions concerning the appropriate part of the total return to use now and the appropriate part to set aside for future needs. In principle, an important allocation decision of this kind surely ought to be based on an assessment of the current situation of the University, on the prospects for the future, and on general policy considerations. It ought not to be dictated by the particular composition of the investment portfolio required to take advantage of conditions in the financial markets.

This is not to argue that the present definition of spendable income will inevitably assign too high a proportion of the total return on endowment to future needs. That may or may not be the case, depending on circumstances. During most of the last 10 or 15 years, for example, counting only dividends and interest as spendable income appears to have worked out fairly well. This was a period when new money from many sources, private and governmental, flowed to Princeton at an unprecedented rate. Under these circumstances it was possible to meet most of the pressing demands of the moment while allowing capital gains to be added to the principal of the endowment fund.

For reasons which are well known, this situation no longer prevails. Princeton, like almost all other private and public institutions, seems to be in a period when increases in expenditures required to meet basic responsibilities are outrunning increases in traditional sources of income. If new ways are not found to meet at least some of the most pressing needs, there is real danger of a deterioration in the quality of the University's teaching and research efforts. This could in turn lead to serious morale problems – indeed, to a concern that Princeton might not continue to be a leader in higher education.

A university is a very delicately balanced organism, and there is evidence enough to indicate how quickly educational fortunes can change – and how difficult it is to recoup once quality has been compromised and losses of key faculty and administrative personnel have occurred.

In times like these, when universities in general are caught in a tightening economic squeeze, it seems hard to defend a definition of spendable income which in effect requires the University to put aside for indefinite future use a larger part of the return on endowment than is required by a prudent concern for the preservation of principal. Whereas a high savings rate may have been appropriate during the late 1950's and much of the 1960's, a lower savings rate may be more appropriate during the 1970's. In any case, we believe that there should be some freedom of action in this regard, and that the rigidity imposed by the present definition of spendable income should be lessened.

Conscious consideration of the contribution that the return on endowment should make to meeting present needs is important in its own right and also in terms of its effect on other sources of support. The major foundations, in particular, are increasingly inclined to ask how hard each institution is straining to meet its immediate problems from its own resources. Similarly, as students and their parents are asked to pay higher tuition, and as alumni and friends are asked to increase their giving, these groups will want to know what use is being made of the return on the University's endowment. In the future it seems safe to predict that both foundations and governmental groups will expect clearer evidence from institutions that they are already doing all they appropriately can to meet their own current problems before requesting substantial assistance from outside. We believe that well-reasoned policies regarding the definition of endowment income, along with evidence of strong internal budgetary procedures, will be important in this regard.

4. *Possible effects on investment policy.* – The last reason for favoring a modification in the definition of spendable income is related to our earlier discussion of the objective of investment policy. So long as no capital gains can be included in spendable income, there will always be the danger that the need for current income will put pressure on those responsible for investment policy to earn a certain amount of dividends and interest regardless of whether or not this is consistent with the pursuit of maximum total return.

The bad effects of such a situation can already be seen in the disappointing investment performance of the endowment funds of some other institutions. When confronted with intense pressures to produce more spendable income now, it can be hard for investment managers to avoid shifting from growth stocks with low current yields

to bonds with very high current yields or to stocks that pay high dividends; yet, allowing investment policy itself to be affected by the need for current income is almost sure to reduce the over-all amount of resources available to the institution in the long run.

As noted above, there is no evidence that the management of Princeton's portfolio has been hampered thus far by pressure for more dividend and interest income. However, if we are right in believing that Princeton will be facing more difficult financial problems in the next decade than in the last decade, the pressures for more current income are bound to intensify. And, if such pressures become strong enough, there might well be some compromise with the objective of seeking the maximum total return consistent with an acceptable level of risk.

A major advantage of replacing the present restriction on the spending of capital gains with the plan described in the next section of this report is that this action would free investment policy from all pressures of this kind. The link between the composition of the portfolio and the definition of spendable income would be broken, and portfolio management could be concerned solely with achieving the maximum total return.

In summary, the major objection to regarding only dividends and interest as spendable income is that this rule gives rise to an insoluble dilemma:

> – If the composition of the portfolio is determined solely with reference to obtaining the maximum total return, and if a high dividend and interest yield is not itself treated as an objective of investment policy, only by accident will the amount of dividends and interest earned in any year equal the portion of the total return that, on the basis of general policy considerations, ought to be spent in the current year.
>
> – On the other hand, if a conscious decision is made regarding amount of endowment income that should be available for use in the current year, as compared with future years, and if this decision is allowed to influence investment decisions, only by accident will the composition of the portfolio be consistent with the objective of maximum total return.

We believe that the "Proposal for a Redefinition of Endowment Income" presented in the next section of this report avoids this dilemma by permitting the University to separate questions of portfolio management from questions of resource allocation. At the same time, we believe that this proposal will preserve the corpus of endowment funds and will facilitate better financial planning and budgeting.

## *A Proposal for a Redefinition of Endowment Income*

In this section of the report we first present four general criteria which we believe should be met by any new proposal for determining the amount of endowment income to be spent in a given year. There are, no doubt, many specific plans consistent with these general criteria which might be considered. In the hope that discussion will be aided by the presentation of a specific proposal, we shall outline and discuss in some detail the general features of what we refer to as our "Basic Plan." While we certainly do not claim that this is the best possible plan which can be devised, we think it has considerable merit and deserves consideration. After this discussion we shall make a few suggestions concerning ways in which this plan might be implemented.

### *Criteria*

The redefinition of endowment income should be consistent with the following general criteria:

1. The corpus of the endowment fund should be preserved in terms of its "real value" or purchasing power. Thus, during a period when prices in general are rising, the monetary value of the endowment should grow at a sufficient rate to compensate for relevant price increases.

2. The corpus of the endowment fund should be cushioned against declines in stock market prices of the kind experienced during the post World War II period.

3. Spendable income for the University should be relatively stable from year to year. In view of the fixed nature of so many of the financial commitments made by any university, it is especially important to minimize the likelihood of sudden reductions in income.

4. There should be a smooth transition between the present definition of spendable income and any redefinition. In particular, any higher spending levels that may result from a redefinition should be approached gradually over time.

### *Outline of the Basic Plan*

The main features of the proposed plan are summarized below in paragraphs labeled *A.1.* through *A.8.**

*A.1.* So long as the market value of a special Stabilization Fund is at or above 50 percent of its "full level" (defined explicitly in *A.3.*) at the start of a fiscal year, the income from endowment available for expenditure in that fiscal year would be set equal to 4 percent of the average market value of the endowment fund over the

*Since some aspects of the plan are rather involved, we have developed two illustrations of how the plan would work under hypothetical conditions. See Appendix *D*.

three previous fiscal years. For this purpose, "average market value" would be calculated by determining the simple arithmetic mean of the six market values recorded as of November 30 and May 31 of each of the three fiscal years preceding the year in question. (This contribution to current income, expressed as a percentage of the average market value of the endowment, will sometimes be referred to as the "income factor.")

*A.2.* Under these same conditions, an additional 5 percent of the average market value of the endowment fund over the three previous fiscal years would be added to the principal of the endowment each year as an explicit compensation for the expected average annual increase in the relevant price index. (This 5 percent contribution to principal will sometimes be referred to as the "inflation factor.")

*A.3.* A special Stabilization Fund would be established. This Fund would be an identifiable component of the University's endowment (or, more accurately, "funds functioning as endowment"). It would be, in effect, a "restricted fund" participating in the investment pool; it would not be separately invested. It would receive credits based on its participation in the investment pool. In addition, the Fund would receive credits under two provisions of the basic plan *(A.4.* and *A.6.).* Procedures for charging the Stabilization Fund are also explained below *(A.5.* and *A.6.).* When the market value of the Stabilization Fund is at or above a level equal to the income from endowment spent during the three previous fiscal years combined, the Stabilization Fund would be said to have reached its "full level" as referred to in *A.1.*

*A.4.* At the end of each fiscal year the total rate of return for that year would be calculated by expressing the sum total of dividends plus interest plus realized and unrealized capital gains as a percentage of the market value of the endowment at the start of the fiscal year. This total rate of return would then be averaged with the total rates of return for the two previous fiscal years to obtain a three-year moving average. If this three-year average were to exceed the rate of 9 percent required to meet the provisions in *A.1.* and *A.2.*, the additional amount earned (calculated by multiplying the difference between the average rate of return for the three-year period and 9 percent by the average market value of the endowment over the three previous fiscal years) would be credited to the Stabilization Fund.

*A.5.* If the three-year average of total rates of return calculated at the start of a fiscal year were less than 9 percent, a 4 percent rate of return would continue to be credited to current income and a 5 percent rate of return would continue to be credited to principal, as provided in *A.1.* and *A.2.*, so long as the market value of the Stabilization Fund at the start of the fiscal year had been equal to

at least 50 percent of its full level. The difference between the amount needed for these purposes and the amount associated with the actual average rate of return would be charged to the Stabilization Fund.

*A.6.* If the three-year average of total rates of return calculated at the start of the fiscal year were less than 9 percent and the procedure described in *A.5.* were inapplicable because the Stabilization Fund was below 50 percent of its full level at the start of the period, the applicable inflation factor would continue to be 5 percent, but the applicable income factor would be determined according to the following schedule:

| *Market Value of Stabilization Fund as % of its Full Level* | *Income Factor* |
|---|---|
| 0 - 6% | 3.2% |
| 7 - 13 | 3.3 |
| 14 - 19 | 3.4 |
| 20 - 25 | 3.5 |
| 26 - 31 | 3.6 |
| 32 - 37 | 3.7 |
| 38 - 43 | 3.8 |
| 44 - 49 | 3.9 |

Application of this schedule would be subject, however, to one further proviso intended to limit year-to-year fluctuations in spendable income: The income factor in any year would not differ by more than .2 of a percentage point, in either direction, from the income factor in the previous year. Additional credits and charges associated with the operation of this proviso would accrue to the Stabilization Fund.

*A.7.* If the balance in the Stabilization Fund were to exceed its "full level" by a substantial amount – either because of extraordinarily high returns in a few years or because of a persistent tendency for the total rate of return to exceed 9 percent – consideration should be given to alternative courses of action (transfer of part of the Fund to principal, modification of the income-factor or inflation-factor percentages, a special appropriation to current income or to a capital account, etc.) in the light of all circumstances prevailing at the time. We do not recommend establishing in advance a particular formula for dealing with situations of this kind.

*A.8.* In any case, all features of the plan should be reviewed periodically, with a thorough review scheduled not less frequently than every five years. It should also be expected that the Board of Trustees will wish to modify specific provisions at any time that this seems necessary in the light of exceptional circumstances.

*Discussion of the Basic Plan*

Before discussing in some detail the reasons for selecting the particular percentage figures used to define both the income factor and the inflation factor, and before commenting on some of the specific provisions relating to the Stabilization Fund, a few comments concerning the general approach seem in order.

*General comments.* – The first thing to be said explicitly is that this proposal would permit the University to treat a small portion of capital appreciation on endowment as current income, assuming that the yield in the form of dividends and interest continues to be less than 4 percent. (The yield, defined in this way, has averaged 3.2 percent over the last thirteen years, as Appendix *B* indicates.)

A second, related, observation is that under this proposal the portion of the total return on endowment which can be spent in any given year is independent of the fraction of the total return on endowment earned in the form of dividends and interest. Thus, the amount of income from endowment which can be spent for current purposes is also independent of the composition of the investment portfolio – which should be determined solely with reference to conditions in the financial markets.

The reasons why we believe that it is proper, under specified conditions met by other elements of this proposal, to treat some part of capital gains as spendable income have been discussed at length in the previous section of this report. There is no need to repeat that discussion here. We note only that if Princeton does move in this direction, we shall be in good company. As Appendix *C* reveals, a number of other institutions (including Rockefeller University, Chicago, Stanford, the Institute for Advanced Study, Cornell, Northwestern, Wesleyan, Tulane, Dartmouth, and Yale) are now using some procedure or other for treating a portion of capital gains as spendable income. In addition, Rochester and M.I.T. are two other institutions which we know are actively considering this possibility.

While no two institutions seem to have approached this question in exactly the same way, it is possible to identify the following major differences between the approach we are recommending and the approach followed at many other institutions:

(1) Under our proposal, all endowment funds under the control of the University would continue to be invested in a single pool, whose objective would be maximum total return, and all endowment accounts would be treated alike in terms of the appropriation of capital gains. In contrast, a number of other institutions (e.g., Chicago, Stanford, Cornell) have established two separate funds: Fund "A" consisting only of "true endowment," with these monies being invested more conservatively than the Princeton portfolio (and thus earning a higher "yield," defined in the traditional sense), and with only dividends

and interest treated as spendable income; and Fund "B" containing "funds functioning as endowment," with these funds being invested much more aggressively, and with a relatively high proportion of capital gains (compared with our proposal) being credited to current income. The only advantage of this separate-fund approach is that it can be implemented without obtaining either a declaratory judgment from the courts or new legislation. It suffers, in our view, from two major disadvantages: (a) it inhibits investment management by setting separate objectives for different funds, and this feature may well result in a lower total return than can be obtained by having a single fund devoted to the one paramount objective of maximizing total return; and (b) it can interfere with the internal allocation of funds by, in effect, providing different current returns (as well as different future returns) to activities supported by true endowment, on the one hand, and funds functioning as endowment, on the other hand. Because of these two difficulties, we recommend strongly that Princeton seek the freedom, through court action or, if need be, new legislation, to treat all endowment funds uniformly in accord with the principles we are suggesting.

(2) Our proposal is very explicit about the limits which should be adhered to in appropriating some portion of capital gains for current uses. Some other institutions have preferred to proceed in an *ad hoc* fashion, appropriating whatever amount seemed best each year. We recognize that the latter approach is more flexible than the approach we are suggesting, but we believe it is better to have some safeguards which will protect the interests of the University in future years. It should be emphasized that the limits we have recommended, and the ways in which they would function, are the result of a conscious effort on our part to develop guidelines which will serve tolerably well both to protect the principal of true endowment funds and to determine the appropriate allocation of resources over time. They are not the product of an automatic mechanism over which we have no control. Furthermore, if experience should indicate that these limits are not the most appropriate ones, they can be changed. Thus, we hope that the proposals presented here avoid the rigidity and arbitrariness for which we criticized the present method of determining endowment income as well as the danger, inherent in a purely *ad hoc* approach that an inadequate job of long-run planning will be done.

(3) In terms of more substantive differences, it should be recognized that the 4 percent contribution to current income called for under our proposal is lower than the corresponding rate of return anticipated by most (if not all) of the other institutions discussed in Appendix *C*. We do not regard this difference as good or bad in and of itself, but note simply that it reflects the operation of various features of our proposal included to protect the principal of the endowment and the future needs of the institution. It may be that we

have been overly conservative in this respect. If so, the various features of the plan which produce this result can be reconsidered in the light of experience.

(4) One of the features of our proposal which serves to limit the amount of funds available for current use is the explicit provision for protecting the real value of the University's endowment by means of the 5 percent "inflation factor." The derivation of this factor is discussed below. So far as we are aware, most other plans lack this feature.

(5) In determining the amount of spendable income from endowment and the annual contribution to be made to principal in compensation for expected increases in the price level, our proposal recommends that the stated percentages be applied to a three-year moving average of the market value of endowment rather than to the market value in just one year (the more common procedure). Similarly, we recommend that the computation of the total rate of return be based on a three-year moving average. One advantage of this averaging device is that it reduces the variability in spendable income and in charges and credits to the Stabilization Fund as a consequence of sharp fluctuations in the stock and bond markets. Another advantage is that it makes it easier to estimate ahead of time the amount of endowment income which will be available in any given year (since at least four of the six biannual observations of the market value of a unit in the investment pool will be known one year before the endowment income is to be distributed); this feature should be very helpful in financial planning and budgeting.

(6) Our proposal differs from most other plans with which we are familiar in that it calls for the establishment of a Stabilization Fund and prescribes procedures for crediting and charging the Fund. We believe that this feature of the proposal, along with the averaging devices, can play an extremely important role in cushioning sharp fluctuations in financial markets and in promoting a relatively steady growth in endowment income.

*Derivation of the 4 percent and 5 percent factors.* – It cannot be claimed that the 4 percent "income factor" or the 5 percent "inflation factor" are derived in any unique way from a set of generally accepted first principles. They are however, based on two relevant considerations: the expected performance of the Princeton portfolio and the likely trend in prices applicable to the operations of the University.

Expectations regarding the performance of the portfolio should be considered first. Our proposal assumes that a total return (made up of dividend and interest income and realized or unrealized capital gains) of 9 percent can be earned in the future on all pooled investment funds. The 9 percent figure assumes that 75 percent of the

portfolio will be invested in common stocks and 25 percent in bonds. It further assumes that the total return on common stocks will be 9½ percent and that yields on bonds will average 7½ percent. Thus, an expected overall return of 9 percent is obtained by weighting the expected stock and bond yields by the respective shares of the portfolio invested in each type of asset: (9.5) (.75) + (7.5) (.25) = 9.0.

The expected yield on bonds is, if anything, somewhat lower than currently available long-term yields of bonds of good quality. The expected return on stocks is consistent with average realized stock returns spanning a long period.*

The record of performance of the Princeton portfolio over the period from 1956 through 1969 affords evidence even more directly relevant to the question at issue. As the figures assembled in Appendix *B* indicate, the total return over this period has averaged 10.2 percent. If we calculate a three-year moving average of total rates of return between 1956 and 1969, we find that the returns have varied from a low of 7.4 percent in 1960-1962 to a high of 16.1 percent in 1959-1961. In the most recent three-year period, 1967-1969, the average total return has been 11.0 percent.

Of course, past history offers no guarantee of what returns may be earned on the portfolio in the future. Despite the fact that common stocks have provided overall returns of about 9½ percent for the past 100 years, we can never be sure what will happen during the next decade – let alone during shorter periods of three years' duration. Nonetheless, the historical record does make the assumption of a 9 percent return seem a reasonable basis for developing what is meant to be a long run approach to the definition of endowment income. Indeed, a case could be made for a more optimistic assumption.

Having determined the total rate of return which it seems reasonable to expect, the next step was to decide what allowance should be made for inflation. The objective to be served by defining an inflation factor may be stated clearly if also stated generally: to estimate what rate of increase in the (current) monetary value of an endowment is necessary to prevent the "real value" (or purchasing power) of the endowment from declining as a consequence of increases in the cost of the activity supported by the endowment.

It would be convenient if we could simply select some well known price index, such as the Consumer Price Index or the Wholesale Price Index, and use the movements of this index as a rough indication of the appropriate size of the inflation factor. Over long periods, these indices have risen at average annual rates of approximately 1 to 3 percent. Unfortunately, however, this approach must be ruled

*See Lawrence Fisher and James H. Lorie, "Rates of Return on Investments in Common Stocks," *Journal of Business*, XXXVIII, 1964, pp. 1-21.

out because the activities of the University differ significantly in economic characteristics from the broader range of activities reflected in the usual indices. Indeed, it can be confidently predicted that the costs of University activities will rise somewhat more rapidly than the usual price indices because of the "handicraft" nature of the teaching process and the difficulty in achieving increases in productivity in the educational sector commensurate with increases in productivity achieved in other sectors of the economy.*

The problem of selecting an appropriate inflation factor for the University is compounded by the fact that the University has many endowments, supporting many quite different activities. Ideally, separate inflation factors should be constructed for endowments devoted to different purposes – for example, to providing scholarships, professorships, and support of the Library. There is no reason to expect the costs of all of these activities to increase at the same rate. The construction of a whole set of inflation factors does not seem practical, however, and we are therefore driven back to the expedient of selecting a single figure.

As paragraph *A.2.* of the proposal indicates, we have ended up recommending that an inflation factor of 5 percent be used. This is approximately the rate at which the costs of scholarships and professorships should be expected to increase over the long run, and it seems defensible on that ground. In including provision for a 5 percent inflation factor, to be credited to principal each year, we believe we are free of any charge that this proposal represents a method of "invading principal." On the contrary, as argued in the previous section of this report, we believe that the concept of protecting principal has content only in the context of what one expects to happen to the relevant price indices. In our view, this proposal deals more directly with the need to take account of likely changes in price levels than the present procedure for defining spendable income.

Subtracting the 5 percent inflation factor from the 9 percent estimate of the total rate of return leaves 4 percent as the maximum income factor which could be chosen, and we believe that it would be a mistake, in view of the financial problems now confronting all of higher education, to select a lower figure. This is the reasoning behind the rate of 4 percent embodied in paragraph *A.1.* of the proposal. If dividends and interest continue to average about 3.2 percent of the market value of the endowment, this would mean that capital gains allocated to current income would amount to .8 of one percent of the average market value of the endowment over the three previous fiscal years. This is a very small part of the expected overall amount of capital gains, as can be seen by comparing the figure of .8 of one percent with the actual average annual appreciation in the market value of a unit of Princeton endowment over the last 13 years – 7.0 percent. (See Appendix *B.*)

*See W. G. Bowen, "The Economics of the Major Private Universities," Carnegie Commission on Higher Education, 1968, especially pp. 12-16.

As already noted, the proposal being advanced here, while increasing somewhat the amount of income from endowment available for current use as compared with present practices, would still result in a smaller amount of income per dollar of endowment being used for current purposes at Princeton than at most other institutions. Only experience, and other developments affecting the financing of higher education. will permit a soundly based judgment as to whether the 4 percent income factor represents the best long run solution to the problem of balancing present needs against future obligations.

*The Stabilization Fund.* – The general purposes of the Stabilization Fund were noted earlier when some of the principal differences between this proposal and plans at other institutions were listed. The following features of the Stabilization Fund deserve brief comment:

(1) The recommendation that the "full level" of the Stabilization Fund be defined in terms of a market value equal to the endowment income spent during the previous three years *(A.3.)* is designed to maintain a more or less constant relation over time between the full level of the Stabilization Fund and the annual distributions of spendable endowment income. Thus, the required size of the Stabilization Fund would increase as the market value of the endowment grows and as new endowment funds are secured. At the same time, the Stabilization Fund would of course be credited with income like all other funds participating in the investment pool. In choosing three years' of endowment income as the standard for the Fund to be at its full level, we believe that we have made adequate provision for most contingencies.

(2) The specific provisions for using the Stabilization Fund to provide a cushion against fluctuations in the total return on endowment *(A.5.* and *A.6.)* seem reasonable to us, but there is certainly no basis for claiming that the particular criteria recommended (e.g. 50 percent of the full level as the limit on the degree to which the Stabilization Fund can be tapped without also requiring a reduction in the income factor) are the only possible choices. In the case of specific rules of this kind, experience is particularly likely to lead to modifications in the plan as now presented. Still, we believe it is better to start out with some rules that can later be modified than to leave many important provisions unspecified. Also, we do attach considerable importance to the general principle of allowing the Stabilization Fund to absorb most of the inevitable fluctuations in market performance.

(3) Similarly, we believe it is important to provide in advance some procedure for rebuilding the Stabilization Fund at a more rapid rate than it would grow under the regular provision of paragraph *A.4.* (which provides that amounts associated with total rates of return

in excess of 9 percent be credited to the Stabilization Fund) whenever the market value of the Stabilization Fund falls below 50 percent of its full level. This is one of the purposes of paragraph *A.6.*

*Suggestions Concerning Implementation of the Basic Plan*

We believe that the simplest and most satisfactory way of implementing this plan would be to appropriate to the Stabilization Fund an amount equal to approximately 25 percent of its "full level" (approximately 9 million dollars). This appropriation could take the form of a transfer of investment units from either Current Funds or one of the funds functioning as endowment to the newly established Stabilization Fund. Once this appropriation were made, the basic plan could be put into effect.

An important advantage of implementing the plan by appropriating only 25 percent of the full level of the Stabilization Fund is that this would assure a smooth transition between the current definition of spendable income and the new definition. So long as the value of the Stabilization Fund is less than 50 percent of its full level, the provisions in paragraph *A.6.* apply. Thus, according to the schedule in *A.6.*, the income factor in the initial year would be 3.5 percent.

It should also be noted that the income factor could rise above the 3.5 percent level and toward its 4.0 percent destination only if investment performance were good enough to generate credits for the Stabilization Fund which would push its market value above 50 percent of its full level. Of course, if investment results in the initial years of the plan were disappointing, the Stabilization Fund would be charged, and the income factor would be reduced. Under extremely adverse circumstances, the Stabilization Fund might be exhausted. Under such circumstances, the income factor would soon be reduced to its base level of 3.2 percent (the average dividend and interest yield on the Princeton portfolio over the last thirteen years), and any amount owed by the Stabilization Fund would have to be repaid before the income could rise above this base level. Hence, a second advantage of this way of implementing the plan is that it would signify right from the beginning that capital gains could be appropriated for current use in significant amounts only as a consequence of good investment results.

## Appendix A

### Glossary of Terms

| | |
|---|---|
| Endowment | – Those funds which historically are restricted as to the expenditure of the principal. |
| Funds Functioning as Endowment | – Those funds which were unrestricted when received, but by Trustee action or administrative decision are functioning as endowment. Both the principal and any related capital gains could be expended. |
| Funds Separately Invested | – A combination of current funds, construction funds or others, which, by the Deed of Gift, cannot be commingled in the Pool. |
| Interest | – Income from fixed investments. |
| Dividends | – Income from equities. |
| Yield | – Interest plus dividends, expressed as a percentage of the market value of the investment pool. |
| Gains | – Realized or unrealized capital appreciation. |
| Total Rate of Return | – The combination of interest, dividends, and capital gains, realized or unrealized, expressed as a percentage of the market value of the investment pool. |
| Pool | – Commingled investment account. |
| Balanced Fund | – A commingled Investment Pool containing fixed investments, convertibles, equities, mortgages, leasebacks, oil payments, etc. |
| Equities Fund | – A commingled fund limited to equities, warrants, etc. |

| | |
|---|---|
| Unit Value | – Units in a common fund determined by periodic evaluation of the total fund divided by the number of the units in the fund. |
| Unit Income | – The amount of income per unit in the pool; traditionally, income derived from dividends and interest, exclusive of any capital gains. |

## Appendix B

*Historical Data on the Performance of the Princeton Investment Pool*/*

| Fiscal Year (ends May 31) | Market Value Per Unit | Dividends and Interest Per Unit**/ | "Yield" [(2)÷ (1)] | Increase in Mkt. Value Per Unit Over Previous Yr. | Total Rate of Return [(3)+ (4)] | Total Rate of Return as 3-Year Average Ending with Year Indicated |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| 1956 | 199.96 | 6.60 | 3.3% | - | - | - |
| 1957 | 214.79 | 7.17 | 3.3 | 7.4% | 10.7% | - |
| 1958 | 208.55 | 7.87 | 3.8 | -3.0 | 0.8 | - |
| 1959 | 247.50 | 8.24 | 3.3 | 18.7 | 22.0 | 11.2 |
| 1960 | 244.80 | 8.62 | 3.5 | -1.1 | 2.4 | 8.4 |
| 1961 | 295.98 | 9.19 | 3.1 | 20.9 | 24.0 | 16.1 |
| 1962 | 274.82 | 9.57 | 3.5 | -7.7 | -4.2 | 7.4 |
| 1963 | 315.82 | 9.93 | 3.1 | 14.9 | 18.0 | 12.6 |
| 1964 | 345.03 | 10.24 | 3.0 | 9.2 | 12.2 | 8.7 |
| 1965 | 369.95 | 10.85 | 2.9 | 7.2 | 10.1 | 13.4 |
| 1966 | 370.43 | 11.27 | 3.0 | 0.1 | 3.1 | 8.5 |
| 1967 | 396.02 | 12.75 | 3.2 | 6.9 | 10.1 | 7.8 |
| 1968 | 439.32 | 13.26 | 3.0 | 10.9 | 13.9 | 9.0 |
| 1969 | 466.01 | 14.16 | 3.0 | 6.1 | 9.1 | 11.0 |
| Avg. for period 1956-1969 | | | 3.2% | 7.0% | 10.2% | |

*/ Source: Summary statement prepared by John W. Bristol & Co., 6-17-68; and updated by R. A. Mestres on 6-19-69 to include results through May 31, 1969.

**/ Before Service Charge.

## APPENDIX C

### Review of Plans at other Institutions for the Treatment of Capital Appreciation

We have been in touch with 14 institutions* with substantial endowments to determine the extent to which they are using capital gains from investments for current operations or have plans along that line. Mr. Mestres wrote to seven institutions that he knew to be actively involved in or considering such action, Chicago, Cornell, Dartmouth, Exeter, Rochester, Stanford and Tulane; and Mr. McVay telephoned the principal fiscal officer at seven others, MIT, Metropolitan Museum of Art, Institute for Advanced Study, Rockefeller University, Northwestern, Wesleyan, and University of Pennsylvania. These inquiries have given us some idea of the various approaches used by some universities with the largest endowments in the country. In addition we are familiar with the practices at Harvard and Yale. Thus, our coverage includes twelve of the leading fourteen institutions, according to the size of their endowment, listed in *The Institutional Investor* in September, 1967. The Universities of Texas and California are not included in this survey.

All institutions except three are currently expending some portion of capital gains for either current operations or capital projects, or have plans to do so. In every instance here reviewed except one (Dartmouth**), this applies to Funds Functioning as Endowment (FFE), over which each institution's Trustees have the power to expend principal as well as income. Within this specific realm of activity, however, institutions have chosen a variety of formulae for using a larger portion of the yield (income, dividends, and gain) than in the past when utilization of the income on even FFE has been confined to the traditional approach.

Because of the variety of approaches toward the greater expenditure of the total return from Funds Functioning as Endowment, we will look at each of the 16 institutions in turn, moving generally from a more traditional or conservative approach to increasingly bolder (and sometimes looser) methods. The differing approaches, however, preclude any definitive comparison of the extent of use of appreciation. Also, it is sometimes difficult to ascertain by letter or in conversation the exact inner workings of university treasuries in regard

*Readers should be aware that there may have been many changes in the thinking and approach of the institutions mentioned here since this appendix was written in July, 1969. For example, the University of Rochester published a detailed study, "University Endowments and Spending Policies" in January, 1970.

**Yale uses appreciation on a "total return" basis, too, but chargeable only to FFE.

to this problem since it naturally reflects a host of variables not specifically under consideration here, including: (1) the comparative success or failure of investment performance in recent years; (2) the size of the endowment and the relation of its income to the institution's operating budget; (3) the extent of reserves that may have been accumulated, as well as their source and purpose; (4) the extent of current or recent deficits and the degree of gloom about costs continuing to out-pace revenue; (5) the extent to which appreciation and/or principal from Funds Functioning as Endowment have been used for building projects, and on and on. So, while we are asking about a single isolated matter, the use of appreciation, it is woven into the total fabric of an institutions overall fiscal situation.

The University of Pennsylvania has not yet used appreciation on Funds Functioning as Endowment, and the Treasurer says that they have no intention of doing so. According to the law of the Commonwealth of Pennsylvania, as interpreted by Drinker, Biddle and Reath, neither the principal nor the accretion on true endowment can be spent. The current return on investments is about 4.25% of market value on a portfolio worth $135 million. Of this sum, $55 million represents gains, realized and unrealized.

So far as we are aware, Harvard has treated only dividends and interest as spendable income and intends to continue this practice.

The University of Rochester is currently studying alternative ways of accounting for "current income" on its endowment and similar funds. Until now, Rochester has followed the classical method of handling endowment funds and recorded as income only declared dividends and interest payments.

Rockefeller University and the Metropolitan Museum of Art may be viewed at one time because of a similar approach by their trustees. While neither institution has used appreciation on invested funds in projecting income for current operations, each will appropriate about $500,000 from "capital" to balance this year's operating budget. At the Metropolitan the deficit last year covered in this way was $407,000. At Rockefeller, this will be the first time that they have experienced an operating deficit. The current market value of the endowment at Metropolitan is $160 million, while it is $200 million at Rockefeller, down slightly from three years ago because a sizeable amount of the endowment was used for a science building.

The situation at Chicago and Stanford is analogous. On January 1, 1968, Chicago divided its investment portfolio between true endowment funds (Endowment Merger) and those functioning as endowment (Capital Merger). Chicago is following a more aggressive policy of investment on the portfolio which they call the Capital Merger and a more traditional investment policy with regard to the Endowment Merger. Chicago will adjust the income realized from the Capital

Merger each year to an amount that would have been realized had the funds been left in the traditional endowment investments.

On September 1, 1968, the beginning of a new fiscal year, Stanford divided its merged endowments funds into two investment groupings. The Merged Endowment Fund now includes endowment funds from which only income may be spent; a new Yield and Gain Fund was created primarily from Funds Functioning as Endowment, and not limited by law or gift stipulations as to the expenditure of principal (including capital gains). Different investment policies apply to the two funds. The Merged Endowment Fund has a market value of $151.6 million, and the Yield and Gain Fund $59.3 million as of September 1st. In the first few years Stanford plans to draw off the combination from the Yield and Gain Fund which will equal the market rate of return on the remaining Merged Fund, which is now close to 5%. Ordinarily, the distribution of gain will occur only if there is a satisfactory retained gain equal to estimated inflation.

A plan proposed by the Vice President and Treasurer of Massachusetts Institute of Technology, Joseph J. Snyder, to the Trustees was adopted on an experimental basis. MIT's investment portfolio has now been put into three funds:

(1) Restricted (true) endowment, the capital of which must be maintained intact, has a current market value of $200 million. The traditional view of income prevails with respect to this fund.

(2) Funds Functioning as Endowment were established by the Trustees, or they include certain other funds available for expenditure over ten to fifteen years. MIT's plan calls for an allocation of perhaps 5-6% in each of the three years from 1969-70 through 1971-72 to whatever purpose is needed, whether budgetary or scholarship. The FFE has a current market value of $50 million and is invested mostly in stocks.

(3) Expendable Fund for capital and other purposes has a value of $80 million and is invested in fixed income securities. The new set-up was effective July 1, 1969.

Based on the old definition of income, the Institute for Advanced Study has been running a deficit for about fifteen years. With a growth-oriented portfolio, the income and dividends have run about 3.0% (range 2.9 to 3.1%) of market value for the past decade. To make up the annual deficit, the Finance Committee has authorized the use of 1½ to 2% of the total market value (i.e. appreciation) for current operations. Thus, 35 to 40% of the operational costs are borne by appreciation on endowment. The total yield (income and appreciation) on the portfolio has run 11 to 12% per annum. The Institute has only two small special purpose endowment funds, and the balance is all in one pot.

At Cornell University, their portfolio was separated into a true "Endowment Fund" and a "Capital Fund" from which the institution is free to spend principal as well as income. In the present market, Cornell expects to earn about 4½% on the Endowment Fund, even though 65% of the holdings are in equities. The Capital Fund is only about one-third as large as the Endowment Fund, and Cornell takes something of a "go-go" attitude toward its operation. About 85 to 90% is in equities, and the remainder in short-term Treasuries. During the first year of operation, 1968-69, the Trustees are going to withdraw 6% of the principal amount of this Fund and spend it. By principal amount is meant the market value at the beginning of the fiscal year. Next year, they may budget 8%, estimating a 2½% return and a 5½% appreciation figure.

Phillips Exeter Academy has separated the Funds Functioning as Endowment from the truly restricted funds following an extensive recategorization. Soon the portfolio will be divided into two separate investment pools, one for Funds Functioning as Endowment and one for all other funds. Exeter is making use of the appreciation on Funds Functioning as Endowment using two self-restraining formulas:

(1) For purposes of the operating budget, the use of gain is determined by subtracting the actual anticipated income from the hypothetical figure derived by multiplying the endowment fund at market value at year end by 3.63% (the historical average since 1950).

(2) For certain specific purposes, such as paying off debts incurred by the building program, the Trustees have authorized withdrawals from the Gain Stabilization Fund. This Fund was established initially by taking 50% of the gain on Funds Functioning as Endowment from 1966 to 1968. Each year the fund will be increased (or decreased) by 50% of the gain (or loss) for Funds Functioning as Endowment.

For a year, Northwestern has divided its investment portfolio, with a current market value of $251 million, into a "high performance pool" ($15 million that they would like to expand based on extending the number of FFE following further review), and a "long-term investment pool" with a current market value of $236 million. Faced with a projected deficit of $1.3 million for next year, 1969-70, and a like amount the following year, Northwestern's Trustees have under discussion a policy whereby they will spend for current purposes the retained earnings of each company in which they invest in their "high performance pool." This would work out to about one-half of the overall return (income, dividends and appreciation) of approximately 9%. The legal definition of endowment income in the State of Illinois is being explored.

Wesleyan University has six separate investment pools. Only one is "pure" endowment, i.e. where some restriction prohibits the use of principal, and its book value is about one-third of the total invested funds, currently valued at $167 million. The Trustees have absolute control over the other pools, which are all Funds Functioning as Endowment. Wesleyan is in the fortunate and unusual position of having two-thirds of its funds in that category. A self-restraining formula has not been developed. Wesleyan had a deficit of $360,000 in 1967-68, and for the current year a deficit of between $1.5 and $2.0 million is anticipated, with the same situation prevailing for next year. The explanation is that, during the past year, some investments of the traditional income-producing kind have been exchanged for others that are more growth oriented and, consequently, the income on market value has dropped from 4% to 3.2%. The deficit will be made up by an appropriation from Funds Functioning as Endowment. Until the current year (except as noted above), the appreciation on FFE has not been used for current operations, but it has been used for capital (building) costs.

Yale University, in its Treasurer's report for the Fiscal Year 1965-66, announced a new policy with respect to the definition of endowment income. It was argued that, as a general policy, a dollar of dividend or interest income (yield) should not be considered any better than a dollar of capital appreciation (gain). During the 1965-66 period, dividend and interest income amounted to about 3¾ percent of the market value of the endowment. To this, approximately $2 million (a prudent portion) of gains were appropriated to investment income, bringing "income available for expenditure" to just under 4¼ percent of the market value of the endowment. For the 1966-67 fiscal year, total income available for expenditure was taken to be 4.7 percent of the market value of the endowment. In this year, $4.4 million of capital gains were appropriated to income. These seem to have been *ad hoc* decisions.

Yale has also developed a plan for projecting spendable endowment income for budgeting purposes. Inasmuch as the description of the plan in the Treasurer's report for 1966-67 is not unambiguous, the following summary may imperfectly reflect Yale's intent. As we understand it, Yale's plan rests on the following identity: Over-all Return on Endowment = Spendable Income + Gains Unspent where spendable income is defined to include some appropriate portion of the capital gains that may prudently be spent. Suppose that we estimate the long-run return from the endowment to be 9 percent, based on experience over a long number of years. Further, assume that the spendable income rate has been defined to be 5 percent. We can then project that the endowment fund will grow at a rate of 4 percent per annum. Consequently, next year's spendable income will grow by 4

percent in order to keep the ratio of spendable income to the market value of the endowment constant. Four percent can then be estimated to be the rate of increase of endowment income over time.

Tulane University, which has a comparatively modest endowment compared to other institutions mentioned in this appendix, does not divide investment portfolio between true endowment funds and those functioning as endowment. Tulane does not use any formula with respect to the use of capital gains belonging to Funds Functioning as Endowment. As their Executive Vice President advised, "We simply use our funds functioning as endowment as we need them, either for operating purposes or on some occasions for plant additions."

Dartmouth's Trustees have recently approved a plan, effective July 1, 1969, which is based on the concept of total return as the method of determining the amount of annual support to be given the operating budget by Dartmouth's invested funds. This total return concept will be applied to the great bulk of Dartmouth's endowment and quasi-endowment funds. This basic total return rate will be made up of the two components of yield and appreciation, the latter including both realized and unrealized appreciation.

The portfolio will *not* be divided into two segments because of the conviction, at least at the present, that superior investment results are obtainable with a single investment portfolio and that administratively a single portfolio will be simpler to operate.

Dartmouth will determine the amount of annual support for its current operations from its invested funds by applying a percentage rate to the total market value of a category of funds called "total return funds" which comprise about 90% of all of Dartmouth's invested funds. In practical terms this rate will consist of all the yield plus a portion of the appreciation. Hence it will be less than the total return rate on the average over a period of years.

For 1969-70 Dartmouth will use a 4.9% or 5% rate to determine the amount of support for current operations. This rate was arrived at on the basis of a number of different factors. The two most important, and ones which might be called self-restraining, are as follows:

(1) Projections of total return rate are based on the average over the years. Enough appreciation will be reinvested each year to keep even with inflation. For 1969-70, the inflation rate is estimated to be 5%. Thus, if Dartmouth's total return rate is 10% on the average for the preceding ten years, probably 5% appreciation will be left in the portfolio and 4.9% will be used, of which probably 4% or so will be yield, and 9/10ths of 1% appreciation. The remaining 1/10th of 1% will also be reinvested. Dartmouth may also set up a reserve so that if in one year the total return is 18%, as it was in one year, part of that return could be used for a reserve.

(2) The total yield on Dartmouth's common stock holdings and other equities will be figured each year on the basis of both distributed and retained earnings of the companies involved. It is not anticipated that the usable portion of total return from the equities portion of the portfolio (4.9% or 5% as stated above) will be permitted to exceed the total of distributed and retained earnings.

## Appendix D

### Notes to Accompany Illustrations of Proposed Plan for a Redefinition of Endowment Income

The attached tables describe how the proposed plan would operate under two hypothetical sets of conditions (Case *A* and Case *B*). Needless to say, we have no way of judging whether the particular assumptions about total returns on investments on which these illustrative cases are based are more or less realistic than any number of other sets of assumptions that might be tried. But we do think that these cases at least illustrate all of the features of the plan under consideration. Many of the figures used are approximate because of rounding.

The tables have been designed so as to permit experimentation with any different assumptions that the reader would like to try.

*CASE A*

| *Fiscal Year* | | |
|---|---|---|
| 1967-68<br>1968-69<br>1969-70 | Cols. 10, 13, 14 | The numbers in these columns represent the assumptions made about endowment income (Col. 10), the total rate of return (Col. 13), and the market value of the endowment (Col. 14) during each of the three years preceding the initiation of the Plan. This information is necessary because of the use of 3-year moving averages in the Plan. The assumptions concerning endowment income and market value of the endowment correspond roughly to the actual situation at Princeton during these years. (All dollar figures are in millions.) The assumption that the total rate of return is constant at 9 percent represents a simplification which will be relaxed when we consider Case *B*. |
| 1968-69<br>1969-70 | Cols. 4, 6 | Since the market value of the endowment at the start of any fiscal year is equal, by definition, to the market value of the endowment at the end of |

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| | | the previous year, the figure shown in Col. 4 for, say, 1968-69 is copied directly from the entry in Col. 14 for the previous fiscal year. Similarly, the figure in Col. 6 is always copied directly from the entry in Col. 13 for the previous year. |
| 1970-71 | Col. 2 | According to *A.3.*, the "full level" of the Stabilization Fund is equal to the amount of endowment income spent during the three previous years. Thus, the figure in Col. 2 is the sum of the figures in Col. 10 for the three previous years. Hence, [36 = 11 + 12 + 13.] |
| | Col. 3 | The actual level of the Stabilization Fund in the first year of the Plan is determined by the amount appropriated to it. We recommend that about 9 million dollars, or 25% of the full level, be appropriated. (The source of this appropriation is ignored in Case *A* in the interests of simplicity. In Case *B*, however, we add the explicit assumption that the $9 million is transferred from funds functioning as endowment and that this transfer, in and of itself, reduces current income.) |
| | Col. 4 | Taken from Col. 14, 1969-70. |
| | Col. 5 | The arithmetic mean of the figures in Col. 4 for the last three years (including the figure shown for 1970-71). Hence: [(380 + 400 + 420) ÷ 3 = 400.] (Note that in this illustrative case we are using only one observation for each fiscal year rather than the two observations specified in *A.1.* This is done only to keep the arithmetic simple.) |
| | Col. 6 | Taken from Col. 13, 1969-70. |

| | |
|---|---|
| Col. 7 | The arithmetic mean of the figures in Col. 6 for the last three years (including the figure shown for 1970-71). Hence: [(9 + 9 + 9) ÷ 3 = 9.] |
| Col. 8 | The dollar amount to be distributed during the year equals the applicable average rate of return (Col. 7) multiplied by the average market value of the endowment over the three previous years (Col. 5). Hence: [9% of 400 = 36.] |
| Col. 9 | According to *A.2.*, the amount credited to principal because of the inflation factor equals 5% of the average market value of the endowment over the three previous years (Col. 5). Hence: [5% of 400 = 20.] |
| Col. 10 | So long as the actual level of the Stabilization Fund is less than 50% of the full level (check Col. 3), the Plan provides that the value of the income factor will be determined according to the schedule shown in *A.6.*, subject to the further proviso limiting year-to-year changes in the income factor. In the first year of the Plan we simply take the Stabilization Fund percentage in Col. 3 (25%) and observe from the schedule in *A.6.* that the income factor should be 3.5%. To obtain the dollar amount of spendable income, we multiply the income factor by the average market value of the endowment over the three previous years. Hence: [3.5% of 400 = 14.] |
| Col. 11 | The amount to be credited, or charged, to the Stabilization Fund is determined by subtracting the credit to principal (Col. 9) and the credit to income (Col. 10) from the total amount to be distributed (Col. 11). |

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| | | Hence: [36 − 20 − 14 = 2.] The percentage shown in this column is calculated in analogous fashion: [9% (in Col. 6) − 5% − 3.5% = 0.5%.] |
| | Col. 12 | The amount of new endowment received during the year is determined by external factors. For simplicity, we assume it is zero in 1970-71. |
| | Col. 13 | The total rate of return earned during the year depends, of course, on the performance of the portfolio. In Case *A*, we assume that a return of 11% is earned during the first year of the Plan. (In Case *B* we will start out with a negative return.) |
| | Col. 14 | The market value of the endowment at the end of the year equals the market value at the start of the year (Col. 4), plus the increase (or decrease) attributable to the total rate of return earned during the year (Col. 13), *less* the amounts credited to income (Col. 10) and to the Stabilization Fund (Col. 11), plus the amount of new endowment received during the year, if any (Col. 12). Hence: [1.11 (420) = 466; 466 − 14 − 2 + 0 = 450.] |
| | Col. 15 | The increase or decrease in the market value of the Stabilization Fund itself during a year equals the total rate of return earned during that year times the market value of the Stabilization Fund at the start of the year. (No subtraction need be made for credits to income since the purpose of this Fund is not to provide current income.) Hence: [11% of 9 = 1.0.] |
| 1971-72 | Col. 2 | See explanation for 1970-71 [12 +13 +14 = 39.] |

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| Col. 3 | The actual level of the Stabilization Fund in every year after the first year of the Plan equals the actual value in the previous year (Col. 3 for 1970-71), *plus* the part of the total return credited or charged to the Stabilization Fund during the previous year (Col. 11 for 1970-71), *plus* the increase or decrease in the market value of the Stabilization Fund during the previous year (Col. 15 for 1970-71). Hence: [9 + 2 + 1.0 = 12.] And 12 is 31% of 39 (the full level for 1971-72). |
| Col. 4 | Taken from Col. 14, 1970-71. |
| Col. 5 | See explanation for 1970-71 [(400 + 420 + 450) ÷ 3 = 423.] |
| Col. 6 | Taken from Col. 13, 1970-71. |
| Col. 7 | See explanation for 1970-71 [(9 + 9 + 11) ÷ 3 = 9.7%.] |
| Col. 8 | See explanation for 1970-71 [9.7% of 423 = 41.0.] |
| Col. 9 | See explanation for 1970-71 [5% of 423 = 21.2.] |
| Col. 10 | The actual level of the Stabilization Fund was 31% of its full level at the start of this year. According to the schedule in *A.6.*, this means that the income factor should be 3.6%. Since this income factor satisfies the other criterion in *A.6.* (that it not differ from the income factor in the previous year by more than .2 of a point in either direction), it is the factor to be used. Hence: [3.6% of 423 = 15.2.] |
| Col. 11 | See explanation for 1970-71. [41.0 − 21.2 − 15.2 = 4.6.] Similarly: [9.7% − 5.0% − 3.6% = 1.1%.] The check is: [1.1% of 423 = 4.6.] |

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|---|---|---|
| | Col. 12 | See explanation for 1970-71. |
| | Col. 13 | Assume that the total rate of return earned during 1971-72 was 8.0 percent. |
| | Col. 14 | See explanation for 1970-71. [1.08 (450) = 486; 486 − 15.2 − 4.6 = 466.] |
| | Col. 15 | See explanation for 1970-71. [.08 (12) = 1.0.] |
| 1972-73 | (From here on we shall not report the calculations as long as they follow the pattern already established. Only the operation of new features of the Plan, or results of special interest, will be noted.) | |
| | Col. 10 | According to the schedule in *A.6.*, the income factor associated with a Stabilization Fund percentage of 42% is 3.8%. |
| 1973-74 | Col. 10 | The Stabilization Fund is now at 48% of its full level (see Col. 3), and, according to the schedule in *A.6.*, the applicable income factor is 3.9%. |
| | Col. 12 | We assume that new endowment, with a market value of 10 million dollars at the end of the fiscal year, was received during 1973-74. |
| | Col. 14 | Now the new endowment must also be taken into account. The market value at the end of this year is calculated as follows: [1.05 (508) = 533; 533 − 18.5 − 8.5 = 506 + 10 = 516.] |
| 1974-75 | Col. 7 | Note that the low total rate of return of 5% earned in the previous year reduces the applicable 3-year average below 9.0% – to 8.7%. |

Col. 10

The Stabilization Fund was at 63% of its full level (Col. 3) at the start of the year. Thus, the income factor is 4.0%, in spite of the fact that the 3-year average of the total rates of return is below 9.0%. This is the procedure called for in *A.5*.

Col. 11

Since the inflation factor and the income factor together equal 9%, whereas the total rate of return was only 8.7%, the Stabilization Fund has to be charged rather than credited this year. Its charge (shown in parentheses) equals: [43.2 − 24.9 − 19.9 = 1.6.] In terms of percentages: [8.7% − 5.0% − 4.0% = 0.3%.] Check: [− 0.3% times 497 = 1.6.]

Col. 13

Note that here we assume that the relatively poor performance of the market in the previous year (when the total return was only 5.0%) is followed by an even worse year in which the total return is negative (− 2.0%).

Col. 14

Since for the first time we have both a *charge* to the Stabilization Fund and a negative rate of return, it is worth showing the derivation of this figure: [.98 (516) = 505.7; 505.7 − 19.9 + 1.6 = 487.4 or 487.] The reason for adding the 1.6 charged to the Stabilization Fund is that this amount was, in effect, transferred from the Stabilization Fund to principal (or was used to cover part of appropriation to current income).

Col. 15

The negative total rate of return of course means a decrease in the market value of the Stabilization Fund: [− 2.0 (31.7) = − 0.6.]

| | | |
|---|---|---|
| 1975-76 | Col. 3 | The actual level of the Stabilization Fund is lower than in the previous year because of both the charge levied against it (Col. 11) and the decrease in its market value (Col. 15). Hence: [31.7 − 1.6 − 0.6 = 29.5.] |
| | Col. 5 | Note that the 3-year averaging device produces a modest increase in the *average* market value of the endowment even though the market value at the start of the year was lower than at the start of the previous year. This illustrates the way in which averaging smooths what would otherwise be larger fluctuations in the figure for market value of the endowment to which the income factor is applied – and thus smooths the path of spendable income. |
| | Col. 7 | The presence in the three-year average of both the low total rate of return of 5% and negative rate of −2% produces an average of 5.3% – which is lower than any 3-year average in fact observed at Princeton in the period 1956-1969. (Compare Appendix *B*.) |
| | Col. 10 | The 4% income factor continues to be applicable in spite of the low figure of 5.3% for the average of the total rates of return over the previous three years, because the Stabilization Fund was above 50% (at 53%) at the start of the year. Thus, the Stabilization Fund cushions spendable income against fluctuations in the market. |
| | Col. 13 | It is assumed that the two bad years in a row are followed by a recovery resulting in a total rate of return for this year of 18%. |

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| 1976-77 | Col. 3 | The Stabilization Fund was buffeted badly by the charge of 18.7 (Col. 11 in 1975-76); however, the fact that its market value rose 5.3 (Col. 15) helped offset the first effect: [29.5 − 18.7 +5.3 = 16.1] |
| | Col. 7 | In spite of the 18% return in the previous year, the 3-year average rate of return is still low (7.0%) because of the two previous bad years. |
| | Col. 10 | Since the Stabilization Fund was only 27% of its full level at the start of this year, the income factor would have been 3.6% had we followed the schedule in *A.6.* The reason for not following the schedule is this would have required a drop of 0.4 of a point in the income factor from one year to another. The last proviso in *A.6.* limits year-to-year drops to .2 of a point, and so 3.8% is the applicable income factor. |
| 1977-78 | Col. 3 | The Stabilization Fund has again decreased in value, and now is only 14% of its full level. |
| | Col. 7 | The applicable total return percentage has now climbed back above 9%. |
| | Col. 10 | Even though the 3-year average of the total rates of return has climbed above 9%, the income factor continues to decline because of the level of the Stabilization Fund. However, the income factor is allowed, by *A.6.* to fall only .2 of a point a year, and so it drops only from 3.8% to 3.6% (rather than to 3.4%, which would result from a straight application of the schedule in *A.6.* when the Stabilization Fund is at 14%). |

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| | | The amount of income from endowment available for expenditure actually increases slightly (from 20.0 in the previous year to 20.4) because the rate of increase in the average market value of the endowment (see Col. 5) was greater than the rate of decline in the income factor. |
| | Col. 11 | For the first time in three years, the total rate of return is large enough to permit part of the distribution (3.9 million) to be credited to the Stabilization Fund. |
| | Col. 13 | Two good years having followed two bad years, we now assume that the total rate of return falls to 8%, slightly below its long-run average. |
| 1978-79 | Col. 7 | The two bad years have now dropped out of the three-year period over which the average of the total rates of return is calculated, and the average applicable to this year is in fact quite high because of the two good years which followed the two bad ones. The high average return of course leads to a large amount to be distributed (Col. 8) and a large credit to the Stabilization Fund (Col. 11). |
| | Col. 10 | The income factor for this year is set by reference to the schedule in *A.6.*, and it is 3.5%, given the fact that the Stabilization Fund was 22% of its full level. This decline from the income factor of 3.6% in the previous year is within the limits established in *A.6.* Note that the income factor continues to decline, even when the applicable total rate of return is very high, because of the low level of the Stabilization Fund. The relatively small income |

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| | | factor in turn permits the credit to the Stabilization Fund to be larger than otherwise would be the case, and thus we accomplish the objective of replenishing the Fund fairly rapidly while at the same time avoiding large year-to-year variations in the income factor. |
| | Col. 11 | We see here that when the applicable total rate of return is well above 9.0% and the income factor is held down because of the low present level of the Stabilization Fund, the credit to the Stabilization Fund can be very large indeed – 26.3 million in this instance. |
| | Col. 13 | The total rate of return in this year is assumed to be 9.0% – about the long-run average. |
| 1979-80 | Col. 10 | The Stabilization Fund has now recovered to 65% of its full level, and so the income factor would be 4.0% were it not for the limitation of .2 of a point on the size of the change that can be permitted in any one year. Adding .2 to the 3.5 in the previous year gives an income factor of 3.7%. This dampening of the rate at which the income factor increases is the other side of the process which dampened the rate of decrease of the income factor in earlier years. Even with the dampening, spendable endowment income for this year is almost 3 million above the figure for the previous year – in part because of the considerable jump in the average market value of endowment. |
| 1980-81 | Col. 7 | The applicable total rate of return again falls below 9.0% (though only slightly below this time). As a consequence, there will be a modest |

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| | | charge against the Stabilization Fund (Col. 11). |
| | Col. 10 | As in the previous year, the limit on year-to-year changes in the income factor holds the increase to .2 of a point, giving us an income factor of 3.9 percent. |
| | Col. 13 | We are assuming that this is the third year of a period of relatively stable growth in the stock market, but that the rate of return is again slightly below the long-term norm of 9.0%. |
| 1981-82 | Col. 10 | The income factor reaches the 4.0% level because the Stabilization Fund is above 50% and the limitation on year-to-year changes no longer serves to hold the income factor below 4.0%. |
| | Col. 13 | It is assumed that the total rate of return is again slightly below the expected long-term average of 9.0 percent. |
| 1982-83 | Col. 11 | The fact that the 3-year average of total rates of return is currently below 9.0 (at 8.3%, as Col. 7 indicates) means that the Stabilization Fund must be charged. The level of the Fund is such, however, that this charge can be absorbed without great difficulty. |

*General Comments:*

1. Over this hypothetical 15-year period, the total rates of return averaged 8.9%.

2. The relatively smooth and steady growth of both spendable income and the market value of the endowment should be noted.

*CASE B*

| | | |
|---|---|---|
| 1967-68<br>1968-69 | Cols. 10, 13, 14 | Figures for income from endowment (Col. 10), the total rate of return (Col. 13), and the market value of the endowment (Col. 14) in these two "pre-plan" years are the actual values which obtained at Princeton. |
| 1969-70 | Col. 13 | In this case, we assume that the last year preceding the start of the plan, 1969-70, turns out to be an exceedingly bad year, with a negative total rate of return of -7.0% (and thus a decrease in market value of a unit of endowment of about 10.0%). |
| | Col. 14 | This value has been calculated to be consistent with the above assumption about total rate of return on the further assumption that no new endowment income is received during 1969-70. Thus, the market value for 1969-70 is set equal to 90% of the market value in 1968-69. |
| 1970-71 | Col. 2 | The "full level" of the Stabilization Fund in the first year of the Plan is determined by summing the endowment income figures for 1967-68 through 1969-70 in Col. 10. (This involves a slight simplification in that we ignore the difference between available endowment income and endowment income actually spent. Correcting for this would affect the level of a number of these figures but not the general pattern of the results.) |
| | Col. 3 | We assume that the Stabilization Fund is started with an appropriation equal to 25% of its initial full level and that this sum is transferred from fund functioning as endowment. |

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| | Col. 4 | The value of endowment at the start of the Plan is assumed to equal the value at the end of the previous fiscal year (376) *less* the 9.6 million appropriated to the Stabilization Fund. Thus: [376 −9.6 = 366.4 or 366.] |
| | Col. 7 | Because of the large negative return (−7.0% assumed to have occurred in the previous year, we start out with an applicable total rate of return, averaged over the 3 previous years, which is very low – indeed, lower than any 3-year average observed for the actual behavior of the Princeton portfolio over the period 1956-1969 (compare Appendix *B*). |
| | Col. 10 | The income factor in the initial year is set by the schedule in *A.6.*, since the Stabilization Fund is below 50% of its full level, and the factor is 3.5%. |
| | Col. 11 | As a result of the low rate-of-return figure in Col. 7, the Stabilization Fund is hit with a substantial charge in its first year (12.5 million). |
| | Col. 13 | It is assumed that there is some recovery from the market lows of the previous year and that the total rate of return for this year is 12.0%. |
| 1971-72 | Col. 3 | The Stabilization Fund is exhausted because the large charge in the first year (12.5) was greater than the initial appropriation (9.6) plus the return in the previous year on the initial appropriation (1.2). Hence, we start the second year of the plan with a negative value for the Stabilization Fund of 1.7 million. This is to be interpreted as the amount |

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| | | which the Fund owes to the principal of the University's endowment. The Stabilization Fund would have to work its way out of this debtor position, and until it does the income factor would be held down by the provisions of *A.6.* |
| | Col. 7 | The average of the total rates of return in the 3 previous years declines further, in spite of the 12.0% return in the immediately preceding year, because the still higher return of 13.9% earned in 1968-69 is now dropped from the 3-year averaging period. |
| | Col. 10 | The income factor is reduced by the maximum amount permitted from one year to the next by *A.6.* (.2 of a point) and is now 3.3%. Spendable endowment income declines $600,000 (from 13.7 to 13.1). |
| | Col. 11 | The Stabilization Fund is again subject to a very substantial charge. |
| | Col. 13 | The recovery is assumed to continue, with a total rate of return of 15.0% in this year. |
| | Col. 15 | The Stabilization Fund is charged the actual rate of return (15% in this year) on its outstanding debt of 1.8 million. |
| 1972-73 | Col. 3 | The Stabilization Fund goes further into debt: [− 1.7 − 14.3 − 0.3 = − 16.3.] |
| | Col. 7 | The 3-year average of the total rates of return rises somewhat, but only to 6.7% because the one very bad year is still in the 3-year period. |
| | Col. 10 | The income factor declines to its base level of 3.2% (the average |

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| | | "yield" – in the form of dividends and interest as a percentage of the market value of the endowment – over the last 13 years at Princeton, as shown in Appendix *B*). |
| | Col. 13 | After two years of recovery, the market is assumed to level off and a total rate of return of 8.0% is assumed. |
| | Col. 15 | See explanation in 1971-72. |
| 1973-74 | Col. 3 | The negative balance shown for Stabilization Fund increases again. |
| | Col. 7 | The 3-year average of the total rates of return now no longer includes the year of the negative total return and instead covers the recovery period – hence, the applicable rate is 11.7%. |
| | Col. 10 | The income factor holds at its base level of 3.2% even though the applicable total return is now high, because of the condition of the Stabilization Fund. The income factor can rise above 3.2% only if the Stabilization Fund achieves a positive balance equal to at least 7% of its full level. Spendable endowment income rises, however, because of the appreciable increase in the market value of the endowment. |
| | Col. 11 | This year the Stabilization Fund receives a large credit. |
| | Col. 13 | It is assumed that a total return of 10.0% is earned this year. |
| 1974-75 | Col. 3 | The amount owed by the Stabilization Fund is now reduced significantly. |
| | Col. 10 | The income factor still holds at its base level of 3.2%. |

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| | Col. 11 | The Stabilization Fund receives a large credit for the second year in a row. |
| 1975-76 | Col. 3 | The Stabilization Fund now has a balance equal to 7% of its full level. All of its debt has been repaid. |
| | Col. 10 | The income factor now rises to 3.3% (according to the schedule in *A.6.*) because the Stabilization Fund equals 7% of its full level. |
| 1976-77 | Col. 3 | The Stabilization Fund is increasing, and now equals 15% of its full level. It should be noted that this is happening even when the average total rate of return is no higher than 9.0%, because of the provisions in *A.6.* holding the income factor below 4% whenever the Stabilization Fund is below 50% of its full level. |
| | Col. 10 | The income factor continues its gradual rise and is now 3.4%, which is the rate specified in the schedule in *A.6.*, when the Stabilization Fund is between 14 and 19% of its full level. |
| | Col. 11 | The Stabilization Fund receives another credit, which would appear in Col. 3 for 1977-78 if the illustration were continued. |

*General Comments*

1. Over this period of 9 years, the total rates of return averaged 8.8%.

2. One noteworthy aspect of this case is the degree to which the Plan holds spendable endowment income steady over a four-year period (1969-70 – 1972-73) as a consequence of a break in the market. The failure of endowment income to increase, while costs were in all likelihood continuing to rise, would cause severe budgetary problems. But they would be much less severe than the problems which would be caused by actual declines in spendable income.

| Fiscal Year | Market Value of Stabilization Fund at Start of Year | | Market Value of Endowment at Start of Year | Average Market Value of Endowment over 3 Previous Years |
|---|---|---|---|---|
| | "Full Level" (Col. 10 summed over 3 Previous Years) | Actual Level (Col. 3 + Col. 11 + Col. 15, all in Previous Year) | (Col. 14 in Previous Year) | |
| (1) | (2) | (3) | (4) | (5) |
| 1967-68 | | | | |
| 1968-69 | | | 380 | |
| 1969-70 | | | 400 | |
| Plan Begins | | | | |
| 1970-71 | 36.0 | 9.0(25%) | 420 | 400 |
| 1971-72 | 39.0 | 12.0(31%) | 450 | 423 |
| 1972-73 | 42.2 | 17.6(42%) | 466 | 445 |
| 1973-74 | 46.1 | 22.1(48%) | 508 | 475 |
| 1974-75 | 50.6 | 31.7(63%) | 516 | 497 |
| 1975-76 | 55.3 | 29.5(53%) | 487 | 504 |
| 1976-77 | 58.6 | 16.1(27%) | 578 | 527 |
| 1977-78 | 60.1 | 8.5(14%) | 637 | 567 |
| 1978-79 | 60.6 | 13.1(22%) | 664 | 626 |
| 1979-80 | 62.3 | 40.6(65%) | 686 | 662 |
| 1980-81 | 66.8 | 50.9(76%) | 717 | 689 |
| 1981-82 | 73.3 | 53.5(73%) | 749 | 717 |
| 1982-83 | 80.1 | 55.6(69%) | 782 | 749 |

[ ] = all assumed numbers; rest are derived from the assumed numbers and the provisions of the Plan.

ILLUSTRATION OF PROPOSED PLAN FOR A REDEFINITION OF ENDOWMENT INCOME UNDER HYPOTHETICAL CONDITIONS *(Case A)*
(All Dollar Figures in Millions)

| Total Rate of Return Most Recent Fiscal Year | Average of Total Rates of Return over 3 Previous Years | Dollar Amount of Total Return to be Distributed in Current Year | Distribution of Dollar Amount of Total Return | | |
|---|---|---|---|---|---|
| | | | Credit to Principal: Inflation Factor | Credit to Income: Income Factor | Credit t Stab. Fun (Charge Stab. Fu |
| (Col. 13 in Previous Year) | | (Col. 7 × Col. 5) | (5% × Col. 5) | (Applicable Factor* × Col. 5) | (Col. 8 − Col. − Col. 1 |
| (6) | (7) | (8) | (9) | (10) | (11) |
| 9% | | | | 11 | |
| 9% | | | | 12 | |
| 9% | | | | 13 | |
| 9% | 9.0% | 36.0 | 5% = 20.0 | 3.5% = 14.0 | 0.5% = 2 |
| 11% | 9.7% | 41.0 | 5% = 21.2 | 3.6% = 15.2 | 1.1% = 4 |
| 8% | 9.3% | 41.4 | 5% = 22.3 | 3.8% = 16.9 | 0.5% = 2 |
| 13% | 10.7% | 50.8 | 5% = 23.8 | 3.9% = 18.5 | 1.8% = 8 |
| 5% | 8.7% | 43.2 | 5% = 24.9 | 4.0% = 19.9 | (0.3%) =(1 |
| (2%) | 5.3% | 26.7 | 5% = 25.2 | 4.0% = 20.2 | (3.7%) =(1 |
| 18% | 7.0% | 36.9 | 5% = 26.4 | 3.8% = 20.0 | (1.8%) =(9 |
| 12% | 9.3% | 52.7 | 5% = 28.4 | 3.6% = 20.4 | 0.7% = 3 |
| 8% | 12.7% | 79.5 | 5% = 31.3 | 3.5% = 21.9 | 4.2% = 2 |
| 9% | 9.7% | 64.2 | 5% = 33.1 | 3.7% = 24.5 | 1.0% = 6 |
| 9% | 8.7% | 59.9 | 5% = 34.5 | 3.9% = 26.9 | (0.2%) =(1 |
| 8% | 8.7% | 62.4 | 5% = 35.9 | 4.0% = 28.7 | (0.3%) =(2 |
| 8% | 8.3% | 62.2 | 5% = 37.5 | 4.0% = 30.0 | (0.7%) =(5 |

* Based on pe

ITION OF ENDOWMENT INCOME
*(Case A)*

| Distribution of Dollar Amount of Total Return | | | New Endowment Received During Current Year | Total Rate of Return Earned During Current Year | Value of Endowment at End of Current Year | Increase (Decrease) in Market Value of Stab. Fund During Current Year |
|---|---|---|---|---|---|---|
| it to cipal; ation ctor | Credit to Income: Income Factor | Credit to Stab. Fund, or (Charge to Stab. Fund) | | | | |
| Col. 5) | (Applicable Factor* × Col. 5) | (Col. 8 − Col. 9 − Col. 10) | (By Assumption) | (By Assumption) | (Col. 4 × Col. 13 − Col. 10 − Col. 11 + Col. 12) | (Col. 3 × Col. 13) |
| )) | (10) | (11) | (12) | (13) | (14) | (15) |
| | 11 | | | 9% | 380 | |
| | 12 | | | 9% | 400 | |
| | 13 | | | 9% | 420 | |
| 20.0 | 3.5% = 14.0 | 0.5% = 2.0 | - | 11% | 450 | 1.0 |
| 21.2 | 3.6% = 15.2 | 1.1% = 4.6 | - | 8% | 466 | 1.0 |
| 22.3 | 3.8% = 16.9 | 0.5% = 2.2 | - | 13% | 508 | 2.3 |
| 23.8 | 3.9% = 18.5 | 1.8% = 8.5 | 10.0 | 5% | 516 | 1.1 |
| 24.9 | 4.0% = 19.9 | (0.3%) =(1.6) | - | (2%) | 487 | (.6) |
| 25.2 | 4.0% = 20.2 | (3.7%) =(18.7) | 5.0 | 18% | 578 | 5.3 |
| 26.4 | 3.8% = 20.0 | (1.8%) =(9.5) | - | 12% | 637 | 1.9 |
| 28.4 | 3.6% = 20.4 | 0.7% = 3.9 | - | 8% | 664 | 0.7 |
| 31.3 | 3.5% = 21.9 | 4.2% = 26.3 | 10.0 | 9% | 686 | 1.2 |
| 33.1 | 3.7% = 24.5 | 1.0% = 6.6 | - | 9% | 717 | 3.7 |
| 34.5 | 3.9% = 26.9 | (0.2%) =(1.5) | - | 8% | 749 | 4.1 |
| 35.9 | 4.0% = 28.7 | (0.3%) =(2.2) | - | 8% | 782 | 4.3 |
| 37.5 | 4.0% = 30.0 | (0.7%) =(5.3) | | | | |

* Based on percentage figure in Col. 3 and the schedule in A.6.

| Fiscal Year | Market Value of Stabilization Fund at Start of Year | | Market Value of Endowment at Start of Year | Average Market Value of Endowment over 3 Previous Years |
|---|---|---|---|---|
| | "Full Level" | Actual Level | | |
| | (Col. 10 summed over 3 Previous Years) | (Col. 3 + Col. 11 + Col. 15, all in Previous Year) | (Col. 14 in Previous Year) | |
| (1) | (2) | (3) | (4) | (5) |
| 1967-68 | | | | |
| 1968-69 | | | 391 | |
| 1969-70 | | | 418 | |
| Plan Begins | | | | |
| 1970-71 | 38.1 | 9.6 25% | 366** | 392 |
| 1971-72 | 40.1 | (1.7)(--) | 409 | 398 |
| 1972-73 | 40.5 | (16.3)(--) | 477 | 417 |
| 1973-74 | 40.1 | (23.9)(--) | 508 | 465 |
| 1974-75 | 41.3 | (10.1)(--) | 538 | 508 |
| 1975-76 | 44.5 | 3.2 7% | 556 | 534 |
| 1976-77 | 48.8 | 7.3 15% | 585 | 560 |

[ ] = all assumed numbers; rest are derived from the assumed numbers and the provisions of the Plan.

*Based on percentage figure in Col. 3 and the schedule in A.6.

**Reflects deduction of 9.6 million, the initial allocation to the Stabilization Fund. See notes.

ILLUSTRATION OF PROPOSED PLAN FOR A REDEFINITION OF ENDOWME
UNDER HYPOTHE "ICAL CONDITIONS *(Case B)*
(All Dollar Figures in Millions)

| Total Rate of Return Most Recent Fiscal Year | Average of Total Rates of Return over 3 Previous Years | Dollar Amount of Total Return to be Distributed in Current Year | Distribution of Dolla of Total Retu | |
|---|---|---|---|---|
| | | | Credit to Principal: Inflation Factor | Credit to Income: Income Factor |
| (Col. 13 in Previous Year) | | (Col. 7 × Col. 5) | (5% × Col. 5) | (Applicable Factor* × Col. 5) |
| (6) | (7) | (8) | (9) | (10) |
| | | | | 11.7 |
| 13.9% | | | | 12.7 |
| 9.1% | | | | 13.7 |
| | | | | |
| ( 7.0%) | 5.3% | 20.8 | 5% = 19.6 | 3.5% = 13.7 |
| 12.0% | 4.7% | 18.7 | 5% = 19.9 | 3.3% = 13.1 |
| 15.0% | 6.7% | 27.9 | 5% = 20.9 | 3.2% = 13.3 |
| 8.0% | 11.7% | 54.4 | 5% = 23.3 | 3.2% = 14.9 |
| 10.0% | 11.0% | 55.9 | 5% = 25.4 | 3.2% = 16.3 |
| 9.0% | 9.0% | 48.1 | 5% = 26.7 | 3.3% = 17.6 |
| 9.0% | 9.3% | 52.1 | 5% = 28.0 | 3.4% = 19.0 |

F ENDOWMENT INCOME
3)

| ation of Dollar Amount of Total Return | | New Endowment Received During Current Year | Total Rate of Return Earned During Current Year | Value of Endowment at End of Current Year | Increase (Decrease) in Market Value of Stab. Fund During Current Year |
|---|---|---|---|---|---|
| Credit to Income: Income Factor | Credit to Stab. Fund, or (Charge to Stab. Fund) | | | | |
| Applicable Factor* × Col. 5) | (Col. 8 −Col. 9 −Col. 10) | (By Assumption) | (By Assumption) | (Col. 4 × Col. 13 − Col. 10 −Col. 11 + Col. 12) | (Col. 3 × Col. 13) |
| (10) | (11) | (12) | (13) | (14) | (15) |
| 11.7 | | | 13.9% | 391 | |
| 12.7 | | | 9.1% | 418 | |
| 13.7 | | | (7.0%) | 376 | |
| | | | | | |
| .5% = 13.7 | (3.2%)(12.5) | - | 12.0% | 409 | 1.2 |
| 3% = 13.1 | (3.6%)(14.3) | 5.0 | 15.0% | 477 | (0.3) |
| 2% = 13.3 | (1.5%)( 6.3) | - | 8.0% | 508 | (1.3) |
| 2% = 14.9 | 3.5% 16.2 | 10.0 | 10.0% | 538 | (2.4) |
| 2% = 16.3 | 2.8% 14.2 | - | 9.0% | 556 | (0.9) |
| 3% = 17.6 | 0.7% 3.8 | - | 9.0% | 585 | 0.3 |
| 4% = 19.0 | 0.9% 5.1 | | | | |